University of Pretoria Yearbook 2016

Design and analysis of experiments 780 (BDE 780)

Qualification	Postgraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
Programmes	BEngHons Industrial Engineering
	BScHons Applied Science Applied Science: Industrial Systems
Prerequisites	No prerequisites.
Contact time	24 contact hours
Language of tuition	English
Academic organisation	Industrial and Systems Eng
Period of presentation	Semester 1 or Semester 2

Module content

The design of an experiment may be defined as ‘the logical construction of an experiment in which the degree of uncertainty with which the inferences are drawn may be well defined’. The module deals with the following:
• Principles of experimental design (Randomisation, Replication and Blocking (local control)
• One-Factor-Two-level Factorial Designs
• One-Factor-Multi-level Factorial Designs
o Completely Randomised Design (CRD) and introduction to ANOVA
o Randomised Complete Block Design (RBD)
o Latin Square Design (LSD)
o Balanced Incomplete Block Design (BIBD)
• Factorial Experiments (2nd and 3rd factorial experiments)
• Blocking and Confounding in Factorial designs
• Overview of Factorial Designs